INSTRUCTIONAL
MATERIALS
SPECIFICATIONS

Computer/Business Education

2003-2004 ADOPTION

JUNE 2001

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Florida Perspective

The traditional approach to instructional materials adoptions in Florida is to "call" for materials suitable for use as the major tool in a specific course. That traditional approach has led to many problems in some course areas, such as Computer Education and Business Technology Education. Often, courses within these programs offer instruction in a wide variety of skills and concepts not normally addressed within a single textbook. In addition, we found that several programs, both academic and vocational, taught the same skills or concepts, but held separate adoptions. The duplication of adoptions is expensive for the State, as well as difficult for publishers.

In our search for solutions, we have designed a new approach for adopting materials for such programs. The 2003-2004 Computer/Business Education adoption will be the first of its kind for Florida. Rather than calling for materials by course, the call is by skill or course concept. All programs for which the skill or concept is applicable will draw from this adoption.

Another obstacle we have faced in technology-based courses is the rapid introduction of updated materials. We currently contract for six years with adopted materials. If technologies change during those six years, we have no procedure for adoption of updated materials until the six-year cycle ends. This means that if we adopt instructional materials for teaching Microsoft Office '97 in 1997, we cannot adopt the newly introduced Office 2000 until the 2003 adoption. Our solution to this problem is to have an interim technology adoption every three years. The interim adoption will call only for new technologies not available at the previous adoption.

✓ **Publisher Submissions**

The list below reflects the common course concepts/skills shared by both Computer Education and Business Technology Education. Publishers will submit by concept/skill area rather than by course. Appendix A will provide the content requirements for each concept/skill area. Materials must be appropriate for the age and interest levels of the intended learners.

Grades 6-8

Introduction to Computers
Keyboarding
Computer Applications (Levels 1 and/or 2)
Computer Programming (Introductory and/or Intermediate levels)
Exploring the Internet
Emergent Technologies

Grades 9-12

Introduction to Computers
Keyboarding
Computer Applications
Digital Publishing
Network Management/PC Support
Computer Programming
BASIC Programming
Web Master
Multimedia
Emergent Technologies

Major Priorities for Instructional Materials

The priorities as described in this specification document were developed from research findings about what makes instructional materials effective. These priorities have undergone review by individuals who have served on state and district committees, by curriculum specialists, by instructional designers, by evaluation specialists, and by administrators of the statewide adoption system.

Instructional materials must be effective in three major priority areas: content, presentation, and learning. The following sections describe essential features for each of these priority areas. These features generally apply to all formats of instructional materials, whether print or other media/multiple media formats.
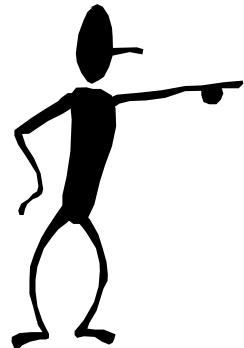
Content

Some features of content coverage have received progressively more attention over the past decade. These features include:

A.	**ALIGNMENT WITH CURRICULUM REQUIREMENTS**
B.	**LEVEL OF TREATMENT OF CONTENT**
C.	**EXPERTISE FOR CONTENT DEVELOPMENT**
D.	**ACCURACY OF CONTENT**
E.	**CURRENTNESS OF CONTENT**
F.	**AUTHENTICITY OF CONTENT**
G.	**MULTICULTURAL REPRESENTATION**
H.	**HUMANITY AND COMPASSION**

The following sections describe the content features expected for each of these priority areas.

A. ALIGNMENT WITH CURRICULUM REQUIREMENTS

Content must align with the state's standards for the subject, grade level, and learning outcomes.

Correlations. Publishers are expected to provide correlation reports on the form provided by the Florida Department of Education to show exactly where and to what extent (mentioned or in-depth) the instructional materials cover each required standard.

Scope. The content should address Florida's required curriculum standards for the subject, grade level, and learning outcomes, including thinking and learning skills.

Completeness. The content of the major tool should be complete enough to stand on its own. To be useful for classroom instruction, instructional materials must be adaptable to the instructional goals and course outlines for individual school districts, as well as the state standards. Content should have no major omissions in the required content coverage.

B. LEVEL OF TREATMENT OF CONTENT

The level of complexity or difficulty of content must be appropriate for the standards, student abilities and grade level, and time periods allowed for teaching.

Objectives. Content should be simple, complex, technical, or nontechnical enough for the intended objectives.

Students. Content should be developmentally appropriate for the age and maturity level of the intended students. It should contain sufficient details for students to understand the significance of the information presented and to engage in reflection and discussion.

Time. The level of complexity or difficulty of content also should allow for its coverage during the time periods available for teaching the subject.

Florida Statutes

233.09(4)(e)—KEY WORDS: suited to the needs and comprehension of pupils at their respective grade levels

233.16(2)—KEY WORD: suitable

233.165(1)(a)—KEY

233.165(1)(c) —KEY WORDS: the degree to which the material would be supplemented or explained

C. EXPERTISE FOR CONTENT DEVELOPMENT

Expertise in the content area and in education of the intended students must be reflected in the authors, reviewers, and sources that contributed to the development of the materials.

Authorship. The authors, consultants, and reviewers must have actually contributed to the development of the instructional materials and should have credentials that reflect expertise in the subject area, course, course category, grade level, pedagogy, education, teaching, or classroom instruction. Qualifications may include expertise in educational psychology or instructional design.

Sources. Primary and secondary sources should reflect expert information for the subject, such as relevant data from research, court decisions, diaries, autobiographies, artifacts, or historical sites. The type of sources considered appropriate will vary with the particular subject area.

D. ACCURACY OF CONTENT

Content must be accurate in historical context and contemporary facts and concepts.

Objectivity. Content that is included in the materials should accurately represent the domain of knowledge and events. It should be factual and objective. It should be free of mistakes, errors, inconsistencies, contradictions within itself, and biases of interpretation. It should be free of the biased selection of information. Materials should distinguish between facts and possible interpretations or opinions expressed about factual information. Visuals or other elements of instruction should contribute to the accuracy of text or narrative.

Representativeness. The selection of content should not misrepresent the domain of knowledge and events. It should include the generally accepted and prevalent truths, major concepts, standards, and models of the profession or discipline of the subject area.

Correctness. Presentation of content should be free of typographical and visual errors. It should include correct grammar, spelling, linguistics, terminology, definitions, descriptions, visuals, graphs, sounds, videos, and all other components of the instructional materials.

E. CURRENTNESS OF CONTENT

Content must be up-to-date for the academic discipline and the context in which the content is presented.

Dates or editions. Copyright dates for photographs and other materials and editions should suggest sufficient currentness of content. Copyright dates and editions serve as indicators about currentness. However, neither the copyright date nor the edition guarantees currentness. In fact, second or third editions may or may not reflect more up-to-date information than first editions.

Informed examination of the text, narrative, and visuals contained in the materials provides the most direct information about currentness of the materials.

Context. Text or narrative, visuals, photographs, and other features should reflect the time periods appropriate for the objectives and the intended learners.

- Sometimes context should be current. For example, a photograph used to show stages of human growth and development will be more relevant when the clothing, hairstyles, and activities reflect present-day styles.
- Sometimes context should be historical. For example, illustrations and photographs of historical events should reflect the historical time period.
- Sometimes context should be both current and historical. For example, historic images alongside modern ones would convey changes in styles over time.

F. AUTHENTICITY

Content should include problem-centered connections to life in a context that is meaningful to students.

Life connections. Instructional materials should include connections to the student's life situations in order to make the content meaningful. Students might be expected to deal with time constraints, consider risks and trade-offs in decision-making, and work with teams. Connections may be made to situations of daily home life, careers, vocation, community events and services, and leisure or recreation. Connections may include hopes and dreams, choices and activities.

Interdisciplinary treatment. Instructional materials also should include interdisciplinary connections in order to make content meaningful. Examples of situations that connect a variety of subject areas include building projects, playing sports, retrieving information or objects, balancing budgets, creating products, and researching information. In addition to subject area connections, instructional materials should connect the course or course category to other disciplines.

Examples of approaches to interdisciplinary connections include:

- explanations and activities for using skills and knowledge from other academic disciplines
- assignments that require students to use collateral learning from other disciplines rather than isolated knowledge or skills
- the focus on common themes across several subject areas (infusion, parallel, transdisciplinary, or multidisciplinary instruction)

G. MULTICULTURAL REPRESENTATION

Portrayal of gender, ethnicity, age, work situations, and various social groups must include multicultural fairness and advocacy.

Multicultural fairness. It is not the number of pages devoted to diversity, equity, or work roles, but the substance of what is stated and portrayed that matters most. For this reason, it can be misleading to count the number of pages or illustrations devoted to a social issue or group. It is more important to focus on the integration of social diversity throughout a set of instructional materials.

Through balanced representation of cultures and groups in multiple settings, occupations, careers, and lifestyles, the materials should support equal

opportunity without regard for age, color, gender, disability, national origin, race, or religion.

In addition to balanced representations, the portrayal of individuals and situations must exclude biases and stereotypes. These portrayals must promote an understanding and appreciation of the importance and contributions of diverse cultures and heritage.

Multicultural advocacy. The understanding and appreciation of multiple cultures extends beyond fair representation. It involves embracing a multicultural context, not just through pictures, but through information about ways to honor differences and deal with conflicts, promote a positive self-image for members of all groups, and provide for the development of healthy attitudes and values.

Effective treatment of multicultural issues requires consideration of the age and ability levels of students and whether or not it is appropriate to include multicultural issues in the study of a particular topic, such as the memorization of a formula or equation. Overall, however, materials should reflect both multicultural fairness and advocacy.

H.   HUMANITY AND COMPASSION

Portrayal of the appropriate care and treatment of people and animals must include compassion, sympathy, and consideration of their needs and values and exclude hard-core pornography and inhumane treatment.

Inclusion of compassion. When providing examples in narrative or visuals, materials sometimes depict the care and treatment of people and animals. Generally, this means showing in some way a measure of compassion, sympathy, or consideration of their needs and feelings.

Exclusion of inhumanity. In the context of personal and family values, Florida expressly prohibits material containing *hard-core pornography*. In addition, although the definition of *inhumane treatment* can sometimes appear to be controversial, as in science research, there is general agreement that instructional materials should not advocate any form of inhumane treatment.

As with the evaluation of multicultural representation, it is important to consider the context of the subject and the age and abilities of the students.

FLORIDA STATUTES

233.061(2)(f)—KEY WORDS: to be a responsible and respectful person

233.061(2)(j)—KEY WORDS: kindness to animals

233.09(4)(c)—KEY WORDS: humane treatment of people and animals

233.165(1)(a)—KEY WORDS: age of the children

233.165(2)—KEY WORD: pornography

REFERENCES FOR CONTENT FEATURES

For a complete list of references and citations, please refer to **Destination: Florida Classrooms—Evaluator's Handbook,** *or request a list of references from the Department of Education, Bureau of Curriculum, Instruction, and Assessment.*

Presentation

Features of presentation affect the practical usefulness of materials and the ease of finding and understanding content. These features include:

A. **COMPREHENSIVENESS OF STUDENT AND TEACHER RESOURCES**
B. **ALIGNMENT OF INSTRUCTIONAL COMPONENTS**
C. **ORGANIZATION OF INSTRUCTIONAL MATERIALS**
D. **READABILITY OF INSTRUCTIONAL MATERIALS**
E. **PACING OF CONTENT**
F. **EASE OF USE OF MATERIALS**

The following sections describe the presentation features expected for each of these areas.

A. COMPREHENSIVENESS OF STUDENT AND TEACHER RESOURCES

FLORIDA STATUTES

233.16(2)—KEY WORDS: **suitable, usable**

233.165(1)(c)—KEY WORDS: **the degree to which the material would be supplemented or explained**

Resources must be complete enough to address the targeted learning outcomes without requiring the teacher to prepare additional teaching materials for the course.

Materials should contain support for students in completing instructional activities and assessments and for teachers in implementing all of the instructional elements. A variety of components can accomplish this purpose.

Typically, materials will include test items, study guides, outlines and strategies for teaching, media supplements, learning activities, and projects.

The major components generally expected for student and teacher resources are listed below.

Student resources. Student materials typically include the major text or program with text or narration, visuals, assignments, and assessments. Formats may include print, audio, visual, computer, or other media.

Effective instructional materials generally integrate the use of reference aids (e.g., index, glossary, maps, bibliography, graphic organizers, and pictures) with the topic being studied. Items that guide students through materials might include clearly labeled materials, directions and explanations, and assignments with menus of choices.

Review and practice activities might include participation activities such as simulations, role-playing situations, investigations, and hands-on practice assignments. Review activities might include self-checks or quizzes. Formats might include worksheets, workbooks, journals, lab books, lab logs, charts, or maps. Feedback might be in the form of answer keys in student materials or in teacher materials.

Review works best as a logical extension of content, goals, objectives, and lessons, with increased similarity to real-life situations. Review activities should require students to recall or apply previously taught knowledge and skills. Frequent short reviews over time or space improve learning more than a concentrated review. Assignments and stages of small practice improve speed and accuracy.

Other components might include enrichment and remediation activities, additional resources, and tests and assessment tools either in the student materials or in the teacher's guide or edition.

Teacher resources. Teacher materials typically include a teacher's edition with the annotated student text and copies of supplementary written materials with answer keys, worksheets, tests, diagrams, etc., so that the teacher has to use only one guide. Publishers may make available inservice training, workshops, or consulting services to support teachers in implementing instructional materials. However, teachers and administrators tend to favor materials that do not require extensive training.

Support, guidelines, resources, or features such as the ones described below help teachers to effectively implement materials in classroom and school settings.

(1) **Components and materials that are easy to use:** Examples include clearance, license, or agreement for copying and use of materials; clear description and accurate directions for use of required equipment, facilities, resources, and environment; clearly labeled grade, lesson, content, and other information to identify components; correct specifications for making media and electronic programs work effectively.

(2) **Materials to support lesson planning, teaching, and learning:** Examples include overview of components and objectives; background for lectures and discussions; technical terminology, and reinforcement and review strategies; scope and sequence chart for activities and planning; sample lesson plans; suggestions for individualized study, small-group and large-group presentations and discussions, school-to-work activities,

field or laboratory experiences, and other extension activities; suggestions for integrating themes across the subject area or course curriculum and forming connections to other disciplines; suggestions for parental and community involvement; cultural highlights to explain and expand on the materials.

(3) **Suggestions for adapting instruction for varying needs:** Examples include alternative approaches to teaching, pacing, and options for varied delivery of instruction such as media, tools, equipment, and emerging technology; strategies for engaging all students, such as open-ended questions to stimulate thinking, journals, manipulatives, explorations, and multisensory approaches; suggestions for addressing common student difficulties or adapting to multiple learning styles; and alternative reteaching, enrichment, and remediation strategies.

(4) **Guidelines and resources on how to implement and evaluate instruction:** Examples include answers to work assignments, practice activities, and tests; possible outcomes of projects or research; suggestions for using learning tasks for classroom assessment; guidelines for alternative assessments, such as sample checklists, peer or performance assessments, portfolios, or projects.

(5) **Resources to use in classroom activities:** Examples include copy masters to use for displays or photocopies; bibliographies or lists of resources and references, including network resources; classroom management strategies and documentation on the manageability of the entire instructional program; in-service workshop or consultation support from the publisher.

B. ALIGNMENT OF INSTRUCTIONAL COMPONENTS

All components of an instructional package must align with each other, as well as with the curriculum.

All components of an instructional package—teacher's edition and materials, student's edition and materials, workbook, supplementary materials, and others—must be integrated and interdependent and must correspond with each other. For example, master copies of handouts in a teacher's edition should align with student activities or assignments. They must match in content and progression of instructional activities.

C. ORGANIZATION OF INSTRUCTIONAL MATERIALS

The structure and format of materials must have enough order and clarity to allow students and teachers to access content and explicitly identify ideas and sequences.

Providing an explicit and teachable structure can double the amount of information remembered. Clear organization allows students and teachers to discriminate important pieces of information through skimming, reading, or browsing.

Clear organization may be accomplished through a combination of features, but generally not through one feature alone.

Access to content. Some features help in searching and locating information, such as a table of contents; menu or map of content; directions on how to locate information or complete assignments; an index for quick reference; goals and/or objectives, outlines, lists, or checklists for major sections; bibliographies and lists of resources; glossaries for quick access to major terms; introductions, key concepts and themes, visual cues, illustrations, labeled examples, and labeled reviews or summaries.

Visible structure and format. Other at-a-glance features signal the organization of content, such as chapter or unit titles and/or frames; headings and subheadings; typographic cues such as bold, italics or changes in size of type; divisions of content such as borders, boxes, circles, highlighting, visual signposts, icons, or color cues; diagrams, labels, and visuals placed near the related content; and numbering of pages and other components.

Objectives or a content outline may serve a similar purpose by introducing main ideas, providing guideposts to use in searching for key information, or serving as a checklist for self-assessment.

Certain types of brief narrative sections also contribute to clear organization. For example, the statement of a clear purpose with content organized around main ideas, principles, concepts, and logical relationships supports the unity and flow of information. Introductions also play a major role when they include anchoring ideas, a list of key points, or conceptual schemes such as

metaphors. Summaries also can assist students in understanding the logical order of topics presented.

Logical organization. The pattern of organization of the content should be consistent and logical for the type of subject or topic. Patterns of organization may include comparison and contrast, time sequence, cause-effect or problem-solution-effect, concrete to abstract, introduction-review-extension (spiral structure), simple-to-complex, whole-part or part-whole, generalization-examples-review-practice, and conflict-inside view-structure.

D. READABILITY OF INSTRUCTIONAL MATERIALS

Narrative and visuals should engage students in reading or listening as well as in understanding of the content at a level appropriate to the students' abilities.

Language style. Language style and visual features can influence the readability of materials. Yet, a popular tool for assessing readability has been the use of a *readability formula* of one type or another. These formulas tend to focus only on a few *countable* characteristics of language style such as the length of words, sentences, and/or paragraphs.

Other features are more important in establishing the readability of instructional materials, such as

- organized, coherent text
- language and concepts familiar to the student
- language that clarifies, simplifies, and explains information
- transition words such as "yet," "also," "next," "for example," "moreover," or "however"
- other phrases that create logical connections
- words with concrete and specific images
- active rather than passive voice
- varied sentence structures, which avoid both choppy sentences and unnecessary words
- specific questions or directions to guide student attention to visuals or key information

Visual features. Visual features that improve readability include

- print that is dark and clear, with good contrast
- paper with clean-cut edges without glare, or computer screens without glare
- margins wide enough on a page or screen to allow easy viewing of the text
- visuals that are relevant, clear, vivid, and simple enough for students to understand

- quantity of visuals suitable for the intended students—both lower ability students and higher ability students tend to require more visuals
- unjustified text (ragged on the right) rather than justified (lined up on the right)
- visuals that contain information in a form different from the text
- graphs, charts, maps, and other visual representations integrated at their point of use
- colors, size of print, spacing, quantity, and type of visuals suitable for the abilities and needs of the intended students

E. PACING OF CONTENT

The amount of content presented at one time or the pace at which it is presented must be of a size or rate that allows students to perceive and understand it.

It is important that materials contain "bite-size" chunks or blocks of information. The chunks should not be so large, nor the pacing so fast, as to overwhelm students. Neither should the chunks be so small, nor the pacing so slow, as to bore them.

F. EASE OF USE OF MATERIALS

Both print and other media formats of instructional materials must be easy to use and replace and be durable enough for multiple uses over time.

Warranty. The actual physical and technical qualities of materials should match the description contained in the publisher's warranty.

Use. Materials must be designed for practical use in the classroom and school environments. They must be easy to identify and store. Teachers and students must be able to access and use the materials. Some of the factors influencing their ease of use include number of components, size of components, packaging, quality of materials, equipment requirements, and cost to purchase or replace components.

The best choice about weight, size, and number of volumes depends on several factors, such as the organization of the content, how well separate volumes may fit time periods for instruction, and the ages of students. Technical production requirements, such as page limits or different types of bindings, may lead to multiple volumes.

Examples of classroom use include repeated copying of consumable materials and repeated use of other materials by students over time. Students should be able to easily use the materials and take home, in a convenient form, most of the material they need to learn for the course.

Technology-rich resources should work properly and run without error. Electronic media for student use should be encoded to prevent accidental or intentional erasure or modification. As with textbooks, electronic media should allow students to easily access and interact with them without extensive supervision or special assistance.

The physical and technical qualities of materials should match with the resources of the schools. Materials such as videos, software, CD-ROMs, Internet sites, and transparencies may serve instructional purposes well, but have little value unless they can be implemented with the school's equipment. Sometimes, a publisher provides training, inservice, or consultation to help in effective use of the materials.

Durability. Students and teachers should be able to have materials that will be durable under conditions of expected use. For example, boxes, books, or other materials should not fall apart

after normal classroom use. The packaging and form of materials should be flexible and durable enough for multiple uses over time. Durability includes considerations such as

- high-quality paper, ink, binding, and cover
- back, joints, body block, and individual pages
- worry-free technology that runs properly, with easy to hear, see, and control audio and visuals, and
- the publisher's guarantee for replacement conditions and agreements for reproduction needed to effectively use the materials

Cost. *Florida's Department of Education Commissioner will consider the impact of cost in making final decisions.* Cost, while not a direct factor in ease of use, influences the ease with which materials can be obtained or replaced. The impact of cost can be complex to estimate. It requires considering the number of materials available at no additional cost with the purchase of the major program or text, the cost over the adoption period of several years, and the number of free materials to support implementation. Attractive features such as higher quality paper and visuals and greater use of color may escalate cost, without enhancing learning effectiveness.

REFERENCES FOR PRESENTATION FEATURES

For a complete list of references and citations, please refer to **Destination: Florida Classrooms**—**Evaluator's Handbook,** *or request a list of references from the Department of Education, Bureau of Curriculum, Instruction, and Assessment.*

Learning

The following features have been found to promote learning and apply to most types of learning outcomes:

A. MOTIVATIONAL STRATEGIES
B. TEACHING A FEW "BIG IDEAS"
C. EXPLICIT INSTRUCTION
D. GUIDANCE AND SUPPORT
E. ACTIVE PARTICIPATION
F. TARGETED INSTRUCTIONAL STRATEGIES
G. TARGETED ASSESSMENT STRATEGIES

The following sections describe the learning features expected for each of these priority areas.

A. MOTIVATIONAL STRATEGIES

Instructional materials must include features to maintain learner motivation.

Expectations. Materials should positively influence the expectations of students. Examples include:

- positive expectations for success
- novel tasks or other approaches to arouse curiosity
- meaningful tasks related to student interests, cultural backgrounds, and developmental levels
- activities with relevance to the student's life
- thought-provoking challenges such as paradoxes, dilemmas, problems, puzzles, controversies, and

questioning of traditional ways of thinking

- challenges that are neither too difficult to achieve nor so easy that students become bored
- hands-on tasks in a concrete context, and images, sounds, analogies, metaphors, or humorous anecdotes
- variety, including the opportunity for students to ask their own questions, set their own goals, and make other choices during learning

Feedback. Materials should include informative and positive feedback on progress. Examples include:

- frequent checks on progress, including testing
- explanatory feedback with information about correctness of responses, how to avoid or correct common mistakes, and/or different approaches to use
- varied forms of assessments (self-assessment, peer assessment, and some learning tasks without formal assessments)

Appearance. Materials should have an appearance generally considered attractive to the intended students.

B. TEACHING A FEW "BIG IDEAS"

Instructional materials should thoroughly teach a few important ideas, concepts, or themes.

Focus. Thoroughly teaching a few big ideas provides focus for the learner's attention. It provides an organizing framework for integrating new information.

Completeness. The thorough teaching of a few big ideas may focus on developing a deeper and more complete understanding of the major themes of a discipline, the content of the subject area, relationships to other disciplines, and the thinking and learning skills required for achieving the specified learning outcomes.

C. EXPLICIT INSTRUCTION

Instructional materials must contain clear statements of information and outcomes.

Clarity of directions and explanations. To support success in learning, instructional materials should include clear presentation and explanations of

- purposes, goals, and expected outcomes
- concepts, rules, information, and terms
- models, examples, questions, and feedback

For example, development of specific thinking skills requires an explicit statement of the particular *thinking skills* to be learned, along with the *strategies* or *steps to follow*. Explicit instruction for thinking skills might also involve showing *examples* of successful thinking contrasted with examples of poor thinking processes.

Similarly, the development of learning skills requires explicit directions about *when* and *how* to do activities such as notetaking, outlining, paraphrasing, abstracting and analyzing, summarizing, self-coaching, memory strategies, persistence, preview and questioning, reading and listening, reflecting, and reciting.

Exclusion of ambiguity. Instructional materials should avoid terms and phrases with ambiguous meanings, confusing directions or descriptions, and inadequate explanations.

D. GUIDANCE AND SUPPORT

Instructional materials must include guidance and support to help students safely and successfully become more independent learners and thinkers.

Level. The type of guidance and support that helps students to become more independent learners and thinkers is sometimes referred to as *scaffolding*. Scaffolding is a solid structure of support that can be removed after a job has been completed. As students gain proficiency, support can diminish, and students can encounter more complex, life-centered problems. Information and activities should provide guidance and support at the level that is needed—no more and no less. Too much can squelch student interest, and too little can lead to failure.

Guidance and support can be accomplished by a combination of the following features:

- organized routines
- advance organizers or models such as
    (1) condensed outlines or overviews
    (2) simplified views of information
    (3) visual representations of new information during initial instruction
    (4) sample problems
    (5) questions to focus on key ideas or important features
    (6) examples of solved problems
    (7) explanations of how the problems were solved
    (8) examples of finished products or sample performances
    (9) analogies, metaphors, or associations to compare one idea to another
- prompts or hints during initial practice
- step-by-step instructions

- immediate and corrective feedback on the accuracy of performance of each step or task, on how to learn from mistakes, and on how to reach the correct answer
- simulations with features for realistic practice
- opportunities for students to do research, and to organize and communicate results

Adaptability. Guidance and support must be adaptable to developmental differences and various learning styles. For example, young children tend to understand concepts in concrete terms and overgeneralize new concepts. Some students need more time, some tend to be more impulsive than reflective, some have trouble distinguishing relevant from irrelevant information, and some have better written than spoken language skills.

Approaches for developmental differences and learning styles of students, include

- a variety of *activities* such as
  (1) structured and unstructured activities
  (2) independent and group work
  (3) teacher-directed and discovery learning
  (4) visual and narrative instruction
  (5) hands-on activities
  (6) open-ended activities
  (7) practice without extrinsic rewards or grades
  (8) simple, complex, concrete, and abstract examples
  (9) variable pacing or visual breaks
- a variety of *modalities* for the various multiple intelligences of students, such as
  (1) linguistic-verbal
  (2) logical-mathematical
  (3) musical
  (4) spatial
  (5) bodily-kinesthetic
  (6) interpersonal
  (7) intrapersonal

E. ACTIVE PARTICIPATION OF STUDENTS

Instructional materials must engage the physical and mental activity of students during the learning process.

Assignments. Instructional materials should include organized activities of periodic, frequent, short assignments that are logical extensions of content, goals, and objectives.

Student responses. Assignments should include questions and application activities during learning that give students opportunities to respond. Active participation of students can be accomplished in a variety of ways. For example, information and activities might require students to accomplish the types of activities listed below.

- respond orally or in writing
- create visual representations (charts, graphs, diagrams, and illustrations)
- generate products
- generate their own questions or examples
- think of new situations for applying or extending what they learn
- complete discovery activities
- add details to big ideas or concepts from prior knowledge
- form their own analogies and metaphors
- practice lesson-related tasks, procedures, behaviors, or skills
- choose from a variety of activities

F. TARGETED INSTRUCTIONAL STRATEGIES

Instructional materials should include the strategies known to be successful for teaching the learning outcomes targeted in the curriculum requirements.

Alignment. Research has documented the strategies that effectively teach different types of learning outcomes. The learning strategies included in instructional materials should match the findings of research for the targeted learning outcomes. Different types of learning outcomes require different strategies. For example, a strategy for memorizing verbal information might be helpful, but it would not align with the strategies required for learning a concept or for learning how to solve a problem.

Completeness. Not only should strategies be aligned, but they also should be complete enough to effectively teach the targeted outcomes. For example, while the explanation of a problem-solving method or model would be appropriate, other strategies also would be necessary in order for students to learn how to resolve different types of problems.

Research summary. Researchers sometimes use different terms for some similar outcomes. For example, *thinking skills* and *metacognition* refer to some of the same types of skills. The following alphabetical list includes terms as they have appeared in research, even though some terms clearly overlap with each other.

- attitudes
- cognitive strategies
- comprehension/ understanding
- concepts
- creativity
- critical thinking
- insight
- metacognition

- motor skills
- multiple intelligences
- problem solving
- procedural knowledge, principles, and rules
- scientific inquiry
- thinking skills
- verbal information, knowledge, or facts

The following section summarizes the research findings for each of these types of learning outcomes.

Effective Teaching Strategies
- **To teach** *Attitudes*—**for example, learning the benefits of reading**
  - Explain and show consequences of choices, actions, or behaviors.
  - Provide relevant human or social models that portray the desired choices, actions, or behaviors

- **To teach** *Cognitive Strategies* (learning how to learn)—**for example, self-monitoring and reflecting upon the effectiveness of the reading process selected and used**

- Encourage or teach (a) organizing and summarizing information; (b) self-questioning, self-reflection, and self-evaluation; and (c) reference skills.
- Encourage or teach when and how to use these different skills.

- **To teach** *Comprehension/Understanding*—**for example, comprehending and understanding information in a reading selection**
  - Outline, explain, or visually show what will be learned in a simple form.

  - Explain with concrete examples, metaphors, questions, or visual representations.
  - Require students to relate new to previously learned information.
  - Require students to paraphrase or summarize new information.
  - Require students to construct a visual representation of main ideas (map, table, diagram, etc.).
  - Give students opportunities to add details, explanations, or examples to basic information.
  - Require application of knowledge or information.

- **To teach** *Concepts*—**for example, learning the concepts of figurative language, metaphors, and similes**
  - Provide clear definition of each concept.
  - Point out important and unimportant features or ideas.
  - Point out examples and non-examples of the concept, showing similarities and differences.
  - Include practice in classifying concepts.
  - Include a wide range of examples in progressive presentation of more complex examples.
  - Emphasize relationships between concepts.

- **To teach** *Creativity*—**for example, exploring different types of reading selections and sources or creating an evaluation tool to identify the impact of mood or meaning**
  - Provide examples of creativity.
  - Include models, metaphors, and analogies.
  - Encourage novel approaches to situations and problems.
  - Show and provide practice in turning a problem upside down or inside out or changing perceptions.
  - Encourage brainstorming.
  - Include questions and problems with multiple answers.

- Provide opportunities of ungraded, unevaluated creative performance and behavior.

- **To teach** *Critical Thinking***—for example, differentiating fact from opinion or determining the validity of arguments**
    - Create conflict or perplexity by using paradoxes, dilemmas, or other situations to challenge concepts, beliefs, ideas, and attitudes.
    - Focus on how to recognize and generate proof, logic, argument, and criteria for judgments.
    - Include practice in detecting mistakes, false analogies, relevant v. irrelevant issues, contradictions, "buggy" algorithms, and predictions.
    - Provide practice in drawing inferences from observations and making predictions from limited information.
    - Explain and provide practice in recognizing factors that influence choice and interpretations such as culture, experience, preferences, desires, interests, and passions, as well as systematic thinking.
    - Require students to explain how they form new judgments and how and why present judgments differ from previous ones.

- **To teach** *Insight***—for example, comprehending the symbols in literary works**
    - Include inquiry and discovery activities.
    - Provide challenging thinking situations with concrete data to manipulate.
    - Promote careful observation, analysis, description, and definition.

- **To teach** *Metacognition* (learning how to think)**—for example, rereading and self-correcting**
    - Explain different types of thinking strategies and when to use them.
    - Encourage self-evaluation and reflection.
    - Include questions to get students to wonder why they are doing what they are doing.
    - Guide students in how to do systematic inquiry, detect flaws in thinking, and adjust patterns of thinking.

- **To teach** *Motor Skills***—for example, writing legibly or using electronic tools proficiently**
    - Provide a mental and physical model of desired performance.
    - Describe steps in the performance.
    - Provide practice with kinesthetic and corrective feedback (coaching).

- **To teach** *Multiple Intelligences*—**for example, retelling vs. rewriting or learning certain rhythms**
    - Verbal-linguistic dimension focuses on reasoning with language, rhythms, and inflections, such as determining meaning and order of words (stories, readings, humor, rhyme, and song).
    - Logical-mathematical dimension focuses on reasoning with patterns and strings of symbols (pattern blocks, activities to form numbers and letters).
    - Musical dimension focuses on appreciation and production of musical pitch, melody, and tone.
    - Spatial dimension focuses on activities of perceiving and transforming perceptions.
    - Bodily kinesthetic dimension focuses on use and control of body and objects.
    - Interpersonal dimension focuses on sensing needs, thoughts, and feelings of others.
    - Intrapersonal dimension focuses on recognizing and responding to one's own needs, thoughts, and feelings.

- **To teach** *Problem Solving*—**for example, forming predictions, inferences, logical endings, or conclusions**
    - Assure student readiness by diagnosing and strengthening related concept, rule, and decision-making skills.
    - Provide broad problem-solving methods and models.
    - Include practice in solving different types of problems.
    - Begin with highly structured problems and then gradually move to less structured ones.
    - Use questions to guide thinking about problem components, goals, and issues.
    - Provide guidance in observing and gathering information, asking appropriate questions, and generating solutions.
    - Include practice in finding trouble, inequities, contradictions, or difficulties and in reframing problems.
    - Include drill and practice to improve speed, consistency, and ease of using problem-solving steps.

- **To teach** *Procedural Knowledge, Principles, and Rules*—**for example, determining when and how to use alphabetical and numerical systems for organizing information**
    - Define context, problems, situations, or goals for which procedures are appropriate.
    - Explain reasons that procedures work for different types of situations.
    - Define procedures—procedures include rules, principles, and/or steps.
    - Provide vocabulary and concepts related to procedures.
    - Demonstrate step-by-step application of procedures.
    - Explain steps as they are applied.
    - Include practice in applying procedures.

- **To teach** *Scientific Inquiry*—**for example, transferring information gathered and recorded into a formal presentation**
  - Explain process and methods of scientific inquiry.
  - Explain and provide examples of (a) typical solution procedures, (b) how to form hypotheses, (c) how to speculate, and (d) how to identify and interpret consequences.
  - Encourage independent thinking and avoidance of dead ends or simplistic answers.
  - Require students to explain experiences with inquiry activities and results of inquiry activities.

- **To teach** *Thinking Skills* (also refer to critical thinking and metacognitive skills)—**for example, comparing and contrasting ideas**
  - Introduce different types of thinking strategies.
  - Explain context or conditions of applying different strategies.
  - Provide definitions, steps, and lists to use in strategies.
  - Include examples of different types of thinking strategies, including how to think with open-mindedness, responsibility, and accuracy.
  - Emphasize persisting when answers are not apparent.
  - Provide practice in applying, transferring, and elaborating on thinking strategies.
  - Integrate metacognitive, critical, and creative-thinking skills.

- **To teach** *Verbal Information, Knowledge, or Facts*—**for example, new vocabulary or labels**

  - Provide a meaningful context to link new information and past and/or future knowledge.
  - Organize information into coherent groups or themes.
  - Use devices to improve memory such as mnemonic patterns, maps, charts, comparisons, groupings, highlighting of key words or first letters, visual images, and rhymes.
  - Include some overlearning and mastery through practice in rehearsal, recall, or restatement of information (refer to *comprehension*).
  - Point out parts, main ideas, pattern, or relationships within information or sets of facts.

G. TARGETED ASSESSMENT STRATEGIES

Instructional materials should include assessment strategies that are known to be successful in determining how well students have achieved the targeted learning outcomes.

Alignment. The assessment strategies should match the learner performance requirements for the types of learning outcomes that have been targeted for the subject matter, course, or course category. Different strategies are appropriate for assessing different types of learning outcomes. For example, a strategy for testing the acquisition of verbal information would not match the requirements for testing whether or not a student has learned a concept or learned how to solve a problem.

The term "assessment," as used in this section, refers to testing or other strategies that assess student progress as a result of learning activities. The results of such assessment provide information about where to strengthen instruction. But it is very important to ask the right questions. If the type of question matches the type of learning outcome, then students and teachers have relevant information about learning progress.

Completeness. In addition to including assessment strategies that align with the performance requirements of the targeted learning outcomes, the strategies should be complete enough to effectively assess the learner's performance requirements required by the targeted learner outcomes. For example, a test item that requires the student to state a rule does not assess whether or not the student knows how to *use* the rule.

Research summary. The research summary for effective assessment strategies for different types of learning outcomes follows the same alphabetical sequence as the previous section.

Effective Assessment Strategies
- **To assess** *Attitudes:*
    - Provide various situations.
    - Require choices about behaviors.

- **To assess** *Cognitive Strategies:*
    - Provide learning tasks.
    - Require students to choose good strategies for learning and/or to learn new materials without teacher guidance.
    - Require students to discuss and explain methods used for various learning tasks.

- **To assess** *Comprehension/Understanding:*
    - Provide topic.
    - Require summary or restatement of information.
    - Provide new context.
    - Require application of information.
    - Provide several statements using words different from the initial teaching.
    - Require identification of the correct meaning.

- **To assess** *Concepts:*
    - Provide new examples and non-examples.
    - Require identification or classification into the correct categories.

- **To assess** *Creativity:*
    - Provide new problems to "turn upside down," study, or resolve—these could be puzzles, dance performances, drama performances, or products to create.
    - Require products or solutions to fit within the particular functions and resources.
    - Provide situations requiring novel approaches.

- **To assess** *Critical Thinking:*
    - Require students to evaluate information or results.
    - Require the use of analysis and research.

- **To assess** *Insight:*
    - Provide situations for inquiry and discovery.
    - Provide situations for manipulation.

- **To assess** *Metacognition* (learning how to think):
    - Provide different situations or problems.
    - Require students to identify types of thinking strategies to analyze and evaluate their own thinking.

- **To assess** *Multiple Intelligences:*
    - Provide situations in the modality that is targeted, e.g., verbal-linguistic, musical, or other modality.
    - Provide situations in several modalities, to allow choice
    - Require performance in the targeted or chosen modalities.

- **To assess** *Motor Skills:*
    - Provide situations and resources for performance of the skill.
    - Include checklist for evaluation.

- **To assess** *Problem Solving:*
    - Require students to choose types of problem-solving strategies for different situations.
    - Require solutions to structured and unstructured, simple and complex problems.

- **To assess** *Procedural Knowledge, Principles, and Rules:*
    - Provide situations that require students to recognize the correct use of procedures, principles, or rules with routine problems.
    - Require students to state procedures, principles, or rules.
    - Require students to choose which ones to apply in different situations.
    - Provide situations that require students to demonstrate the correct use of procedures, principles, or rules with routine problems.

- **To assess** *Scientific Inquiry:*
    - Provide situations or problems that require speculation, inquiry, and hypothesis formation.
    - Provide research, hands-on activity, and conclusions.

- **To assess** *Thinking Skills* (also refer to critical thinking and metacognitive skills):
    - Require students to summarize different types of thinking strategies.
    - Provide situations that require students to choose the best type of thinking strategy to

      use.
    - Require students to detect instances of open- v. closed-mindedness.
    - Require students to detect instances of responsible v. irresponsible and accurate v. inaccurate applications of thinking strategies.
    - Provide situations that require the student's persistence in order to discover or analyze information to obtain answers to specific questions.
    - Require students to apply specific thinking strategies to different real-world situations.

- **To assess** *Verbal Information, Knowledge, or Facts:*
    - Require students to recall information.
    - Require students to restate information.

REFERENCES FOR LEARNING FEATURES

For a complete list of references and citations, please refer to **Destination: Florida Classrooms—Evaluator's Handbook,** *or request a list of references from the Department of Education, Bureau of Curriculum, Instruction, and Assessment.*
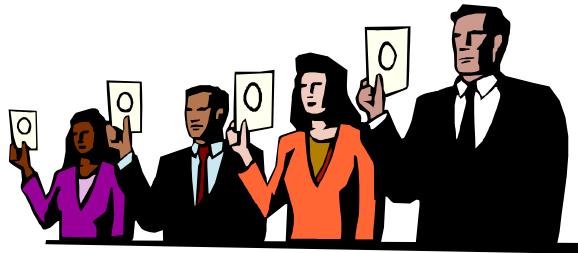
Criteria for Evaluation

T he instructional materials adoption process must be fair to all publishers who take the time and expense to submit their materials. Applying evaluation criteria consistently to each submission assures that the materials will be judged fairly.

Regardless of format or technology, effective materials have certain characteristics in common, and the basic issues, important for the evaluation of instructional materials, apply to all subject areas and all formats. These issues are addressed in Florida's list of priorities and the criteria as detailed in the previous pages of this document. What follows is the evaluation instrument used by adoption committee members. Evaluators will use the criteria-based instrument to engage in systematic reflection of the processes they follow and decisions they make about the quality of materials submitted by publishers.

The extensive research base and review processes used to identify these criteria establish their validity as an integral part of Florida's instructional materials adoption system. Applying these criteria consistently to each submission helps assure that the materials submitted by publishers will be judged fairly.

STATE COMMITTEE EVALUATION FORM

DIRECTIONS: *Use this form along with the criteria in the instructional materials specifications to independently review each submission.*

As part of your independent review for each of the criteria, rate and comment on how well the submission satisfies the requirements. Possible ratings are as follows:

■ THOROUGHLY, ■ HIGHLY, ■ ADEQUATELY , ■ MINIMALLY , *or* ■ NOT AT ALL .

At your state committee meeting, you will discuss your review and agree on the summary of RATINGS, COMMENTS, and the OVERALL EVALUATION for each submission. Your committee will then VOTE for or against adoption and will make suggestions for notations to include in the Florida Catalog of Instructional Materials. *Your committee's decisions will appear on one Committee Consensus Questionnaire.*

IDENTIFICATION OF SUBMISSION
Subject Area Committee
Course for Which Recommended
Name of Publisher
Title of Submission

CONTENT

A.   ALIGNMENT WITH CURRICULUM REQUIREMENTS

Content aligns with the state's standards for the subject, grade level, and learning outcomes.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **CORRELATIONS**_____

✓   **SCOPE**_____

✓   **COMPLETENESS** _____

B.   LEVEL OF TREATMENT OF CONTENT

The level of complexity or difficulty of content is appropriate for the standards, student abilities and grade level, and time periods allowed for teaching.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **OBJECTIVES**_____

✓   **STUDENTS**_____

✓   **TIME**_____

C.   EXPERTISE FOR CONTENT DEVELOPMENT

Expertise in the content area and in education of the intended students are reflected in the authors, reviewers, and sources that contributed to development of the materials.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **AUTHORSHIP**_____

✓   **SOURCES** _____

D.   ACCURACY OF CONTENT

Content is accurate in historical context and contemporary facts and concepts.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **OBJECTIVITY**_____

✓   **REPRESENTATIVENESS**_____

✓   **CORRECTNESS**_____

E.   CURRENTNESS OF CONTENT

Content is up-to-date for the academic discipline and the context in which the content is presented.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **DATES OR EDITIONS**_____

✓   **CONTEXT**_____

✓   **INFORMATION**_____

F.   AUTHENTICITY OF CONTENT

Content includes problem-centered connections to life in a context that is meaningful to students.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

   What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

G.   MULTICULTURAL REPRESENTATION

Portrayal of gender, ethnicity, age, work situations, and social groups includes multicultural fairness and advocacy.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

    What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **MULTICULTURAL FAIRNESS**_____

✓   **MULTICULTURAL ADVOCACY**_____

H.   HUMANITY AND COMPASSION

Portrayal of the appropriate care and treatment of people and animals includes compassion, sympathy, and consideration of their needs and values and excludes hard-core pornography and inhumane treatment.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

    What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **INCLUSION OF COMPASSION**_____

✓   **EXCLUSION OF INHUMANITY** _____

SUMMARY ANALYSIS FOR CONTENT

In general, how well does the submission satisfy *CONTENT* requirements?

THOROUGHLY   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

☑ *PRESENTATION*

A.   COMPREHENSIVENESS OF STUDENT AND TEACHER RESOURCES

Resources are complete enough to address the targeted learning outcomes without requiring the teacher to prepare additional teaching materials for the course.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓ **STUDENT RESOURCES**_____

✓ **TEACHER RESOURCES**_____

B.   ALIGNMENT OF INSTRUCTIONAL COMPONENTS

All components of an instructional package align with each other, as well as with the curriculum.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issue? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓ **ALIGNMENT**_____

C.   ORGANIZATION OF INSTRUCTIONAL MATERIALS

The structure and format of materials have enough order and clarity to allow students and teachers to access content and explicitly identify ideas and sequences.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓ **ACCESS TO CONTENT**_____

✓ **VISIBLE STRUCTURE AND FORMAT**_____

✓ **LOGICAL ORGANIZATION**_____

D.   READABILITY OF INSTRUCTIONAL MATERIALS

Narrative and visuals will engage students in reading or listening as well as understanding of the content.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓ **LANGUAGE STYLE**_____

✓ **VISUAL FEATURES**_____

E.   PACING OF CONTENT

The amount or content presented at one time or the pace at which it is presented is of a size or rate that allows students to perceive and understand it.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issue? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

     ✓ **PACING**_____

F.   EASE OF USE OF MATERIALS

Both print and other media formats of instructional materials are easy to use and replace and are durable enough for multiple uses over time.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **WARRANTY**_____

✓   **USE**_____

✓   **DURABILITY**_____

SUMMARY ANALYSIS FOR PRESENTATION

In general, how well does the submission satisfy *PRESENTATION* requirements?

'HOROUGHLY   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

☑ *LEARNING*

A.   MOTIVATIONAL STRATEGIES

Instructional materials include features to maintain learner motivation.

❏ *THOROUGHLY*   ❏ *HIGHLY*   ❏ *ADEQUATELY*   ❏ *MINIMALLY*   ❏ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **EXPECTATIONS**_____

✓   **FEEDBACK**_____

✓   **APPEARANCE**_____

B.   TEACHING A FEW "BIG IDEAS"

Instructional materials thoroughly teach a few important ideas, concepts, or themes.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **FOCUS**_____

✓   **COMPLETENESS**_____

C.   EXPLICIT INSTRUCTION

Instructional materials contain clear statements of information and outcomes.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **CLARITY OF DIRECTIONS AND EXPLANATIONS**_____

✓   ✓ **EXCLUSIONS OF AMBIGUITY**_____

D.   GUIDANCE AND SUPPORT

Instructional materials include guidance and support to help students safely and successfully become more independent learners and thinkers.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **LEVEL**_____

✓   **ADAPTABILITY**_____

E.   ACTIVE PARTICIPATION OF STUDENTS

Instructional materials will engage the physical and mental activity of students during the learning process.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **ASSIGNMENTS**_____

✓   **STUDENT RESPONSES**_____

F.   TARGETED INSTRUCTIONAL STRATEGIES

Instructional materials include the strategies known to be successful for teaching the learning outcomes targeted in the curriculum requirements.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

    What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **ALIGNMENT**_____

✓   **COMPLETENESS**_____

G.   TARGETED ASSESSMENT STRATEGIES

Instructional materials include assessment strategies known to be successful in determining how well students have achieved learning outcomes targeted in the curriculum requirements.

❑ *THOROUGHLY*   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

    What COMMENTS, if any, do you have about the strengths or concerns for the following issues? *(Please give specific examples with page numbers. Extra space for notations is provided on page 8.)*

✓   **ALIGNMENT**_____

✓   **COMPLETENESS**_____

SUMMARY ANALYSIS FOR LEARNING

In general, how well does the submission satisfy *LEARNING* requirements?

THOROUGHLY   ❑ *HIGHLY*   ❑ *ADEQUATELY*   ❑ *MINIMALLY*   ❑ *NOT AT ALL*

OVERALL EVALUATION

1. If given responsibility for teaching the course, would you choose these materials for classroom use?

      ❑ **YES**   ❑ **NO**

2.   What notations do you think should be included in the Catalog?

Committee Member Signature   **Date**

Appendix A

Content Requirements
For
Computer/Business Education
Skills and Concepts

CORRELATING TO CONTENT REQUIREMENTS

Many of these Computer/Business concepts and skills are taught at various levels. In general, the *basic* level is designed to allow students to develop initial concepts and skills. The *intermediate* level is designed to allow students to apply their understanding and skills to specific projects, as they continue to become more proficient. The *advanced* level is designed to allow students to develop and apply knowledge and skills beyond the basic and intermediate levels. These level distinctions are noted with the relevant content requirements.   Publishers should denote the intended level or levels for which a submission is intended in the *Publisher Questionnaire*.

Publishers are **required** to correlate submitted material to the content requirements relevant to the area of submission. These correlations must also be made available in published form to all purchasing districts and schools. The necessary forms for correlation are available in the Office of Instructional Materials at the Florida Department of Education, and from the Instructional Materials web site at
http://www.firn.edu/doe/bin00015/home0015.htm.

REMEMBER:

It is imperative that materials submitted for grades 6-8 be designed for students of that age.

Materials submitted for grades 9-12 must be suitable for that age group.

Grades 6-8

Introduction to Computers

The purpose is to provide students the opportunity to understand the general functions and capabilities of computer systems and their impact on society. Content should include an interactive environment utilizing applications, keyboard development skills, simulations, multimedia, productivity-oriented software, and tutorial software. Materials must be designed for students in grades 6-8.

1.   Computer systems, i.e., input, process, and output.

2.   Functions of basic computer hardware and software and peripheral devices.

3.   Activities for students to demonstrate ability to operate a computer for varied educational purposes.

   3.1   Synthesize and separate collected information into useful components using a variety of techniques.

   3.2   Use electronic technology including databases and software to gather information and communicate new knowledge.

   3.3   Create and interpret tables, graphs, equations, and verbal descriptions to explain cause-and-effect relationships.

   3.4   Analyze real-world data by applying appropriate formulas for measures of central tendency and organizing data into a quality display, using appropriate technology, including calculators and computers.

4.   Telecommunications concepts.

   4.1   Activities for students to demonstrate understanding of how the multiple media tools of graphics, pictures, color, motion, and music can enhance communication in television, film, radio, and advertising.

5.   Usefulness of technology and the ability to select the appropriate tool(s) and technology resource(s) to address those tasks and problems.

   5.1   Audiovisual aids in presentations.

   5.2   Appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.

   5.3   Collecting, organizing, and displaying data in a variety of forms, including tables, line graphs, charts, and bar graphs, to determine how different ways of presenting data can lead to different interpretations.

   5.4   Two-dimensional and three-dimensional media, techniques, tools, and processes to solve specific visual arts problems with refinement and control.

   5.5   Activities for students to demonstrate understanding of these skills and concepts.

6.   The impact of technology on careers and society and the need for its ethical use.

   6.1   Activities for students to demonstrate understanding of these skills and concepts.

7.   Personal and occupational uses of computers and other technology.

    7.1   How to access a variety of technologies for health information.

    7.2   How messages from media and other sources influence health behavior.

    7.3   Computers speed up and extend people's ability to collect, sort, and analyze data; prepare research reports; and share data and ideas with others.

    7.4   Activities for students to demonstrate understanding of these skills and concepts.

Keyboarding

1.   Keyboarding skills.

    1.1   Activities for students to demonstrate understanding of and proficiency with these skills and concepts.

Computer Applications

The purpose is to place emphasis on microcomputer applications through hands-on activities presented in an interactive learning environment. Specific content to be covered should include, but not be limited to:

1.   Computer literacy. (Basic)

    1.1   Basic computer terminology.

    1.2   Using computer directories to locate files.

2.   Effective use of varied input and output devices. (Basic)

    2.1   Activities for students to demonstrate proficiency in these skills.

3.   Word processing skills. (Basic)

    3.1   Activities for students to demonstrate proficiency in basic word processing skills.

4.   Using spreadsheets.

    4.1   Synthesizing and separating collected information into useful components using a variety of techniques. (Basic/Intermediate)

    4.2   Collecting, organizing, and displaying data in a variety of forms, including tables, line graphs, charts, and bar graphs, to determine how different ways of presenting data can lead to different interpretations.   (Basic)

    4.3   Applying addition, subtraction, multiplication, and division skills to the solution of problems. (Basic)

    4.4   Creating and interpreting tables, graphs, equations, and verbal descriptions to explain cause-and-effect relationships.   (Intermediate)

    4.5   Analyzing real-world data by applying appropriate formulas for measures of central tendency and organizing data in a quality display, using appropriate technology.   (Intermediate)

4.6   Activities for students to demonstrate proficiency in basic and intermediate spreadsheet skills.

5.   Using database files. (Basic/Intermediate)

    5.1   Organizing information using alphabetical, chronological, and numerical systems. (Basic)

    5.2   Using electronic technology including databases and software to gather information and communicate new knowledge.   (Basic)

    5.3   Using a variety of reference materials, including indexes, magazines, newspapers, journals, and tools to gather information for research topics. (Intermediate)

    5.4   Activities for students to demonstrate proficiency in basic and intermediate database skills.

6.   Manipulating graphic images using varied applications. (Basic/Intermediate)

    6.1   Understanding how the multiple media tools of graphics, pictures, color, motion, and music can enhance communication in television, film, radio, and advertising.   (Basic)

    6.2   Incorporating audiovisual aids in presentations.   (Intermediate)

    6.3   Knowing and using the interrelated elements of art and the principles of design to improve the communication of ideas.   (Intermediate)

    6.4   Activities for students to demonstrate proficiency in basic and intermediate graphic imaging skills.

7.   Awareness of basic concepts of telecommunications and Internet use, including keyword and Boolean search strategies. **(Basic/Intermediate)**

    7.1   Activities for students to demonstrate understanding of (basic) and proficiency in (intermediate) telecommunications concepts and Internet skills.

8.   Awareness (*basic*) and knowledge (*intermediate*) of the impact of computers on society and the need for their ethical use.

    8.1   Activities for students to demonstrate understanding of (basic) and proficiency in (intermediate) these basic concepts and skills.

9.   The use of sequential and logical planning to describe the tasks, resources, and timelines necessary for the completion of specified projects. (Intermediate)

    9.1   Activities for students to demonstrate understanding of and proficiency in basic problem-solving skills.

10.   Use of software to create visual organizers and design solutions for specified projects (e.g., storyboards, flowcharts, schematic drawings). (Intermediate)

    10.1   Activities for students to demonstrate proficiency in these skills.

11.   Use of productivity and multimedia tools and peripherals to support personal effort and group collaboration for specified projects throughout the curriculum.   (Intermediate)

    11.1   Activities for students to demonstrate proficiency in these skills.

Emergent Technologies

The purpose of this course is to enable students to develop knowledge of emergent computer-based technologies and telecommunications and related ethics, issues, and trends. Specific content to be covered should include, but not be limited to:

1.   Computer literacy concepts and skills.

      1.1   Activities for students to demonstrate basic computer literacy.

2.   Emergent computer-based technologies.

      2.1   Using electronic technology including databases and software to gather information and communicate new knowledge.

      2.2   Analyzing form and functionality of specified emergent computer-based technologies.

      2.3   Knowing that computers speed up and extend people's ability to collect, sort, and analyze data; preparing research reports; and share data and ideas with others.

      2.4   Understanding important technological developments and how they influence human society.

      2.5   Activities for students to demonstrate understanding of and proficiency in basic these concepts and skills.

3.   Emergent telecommunications.

      3.1   Knowing the major events that shaped the development of various cultures (e.g., the spread of agrarian societies, population movements, technological and cultural innovation, and the emergence of new population centers).

      3.2   Analyzing form and functionality of specified emergent telecommunication technologies.

      3.3   Activities for students to demonstrate understanding of these concepts.

4.   The potential impact and trends of emerging technologies on society and the need for their ethical use.

      4.1   Activities for students to demonstrate understanding of these concepts.

5.   Career opportunities in emergent computer-based technologies and telecommunications.

Exploring the Internet

The purpose is to enable students to develop basic knowledge of the functions, capabilities, applications, and social implications of the Internet. Specific content to be covered should include, but not be limited to:

1.   Social and ethical implications of varied uses of the Internet.

      1.1   Activities for students to demonstrate understanding of these concepts.

2.   Effective use of a browser.

      2.1   Activities for students to demonstrate proficiency in using a browser.

3.   Proper etiquette and safe and appropriate Internet use.

    3.1   Activities for students to demonstrate understanding of these concepts.

4.   Electronic searches to acquire information, including the use of keyword and Boolean search strategies.

    4.1   Activities for students to demonstrate understanding of and proficiency in these concepts and skills.

5.   Accessing, acquiring, evaluating, and using digital information from the Internet for varied purposes.

    5.1   Locating, organizing, and interpreting written information for a variety of purposes, including classroom research, collaborative decision making, and performing a school or real-world task.

    5.2   Using reference materials, including indexes, magazines, newspapers, journals, and tools to gather information for research topics.

    5.3   Using electronic technology to gather information and communicate new knowledge.

    5.4   Activities for students to demonstrate proficiency with these skills.

6.   Concepts of telecommunications.

    6.1   Activities for students to demonstrate understanding of these concepts.

Programming

The purpose is to enable students to develop basic and intermediate knowledge of programming concepts and one or more languages. Specific content should include, but not be limited to:

1.   Basic concepts and uses of computer programming. (Basic)

    1.1   Activities for students to demonstrate understanding of these concepts.

2.   Development and uses of the specified programming language(s). (Basic)

    2.1   Activities for students to demonstrate understanding of these concepts.

3.   Structured programming techniques for the specified programming language(s). (Basic)

    3.1   Activities for students to demonstrate understanding of these concepts.

4.   Defining and analyzing a real-world problem that lends itself to computer solutions. (Basic)

    4.1   Using a variety of reference materials to gather information for research topics.

    4.2   Using electronic technology to gather information and communicate new knowledge.

    4.3   Activities for students to demonstrate proficiency in these skills or concepts.

5.   Sequential, logical problem-solving process, and develop an appropriate algorithm. (Basic)

5.1   Activities for students to demonstrate proficiency with concepts and skills.

6.   Coding an algorithm with the appropriate documentation using the specified programming language(s). (Basic)

   6.1   Activities for students to demonstrate proficiency with these skills.

7.   Executing and debugging a program written in the specified programming language(s). (Basic)

   7.1   Activities for students to demonstrate proficiency with these skills.

8.   The impact of computers on society and the need for their ethical use. (Basic)

   8.1   Activities for students to demonstrate understanding of these concepts.

9.   Developing proper algorithms to reach a solution to a problem. (Intermediate)

   9.1   Activities for students to demonstrate proficiency with these skills.

10.   Structured programming techniques. (Intermediate)

   10.1   Activities for students to demonstrate proficiency with these skills.

11.   Use intermediate programming skills in the selected languages(s) to solve a problem. (Intermediate)

   11.1   Activities for students to demonstrate proficiency with these skills.

Grades 9-12

Introduction to Computers

The purpose is to enable students to develop knowledge of the functions, capabilities, applications, and social implications of computer technology. Materials must be designed for students in grades 9-12.

Specific content to be covered should include, but not be limited to:

1.   Processing data and accessing resources with computers.

2.   The functions of computer hardware and software and peripheral devices.

3.   Activities to show proficiency in operating a computer for various educational purposes.
    3.1   Comprehension and synthesis of content, processes, and experiences from a variety of media.
    3.2   Interpreting data that has been collected, organized, and displayed in charts, tables, and plots.
    3.3   Use of media, techniques, tools, and processes to communicate an idea or concept based on research, environment, personal experience, observation, or imagination.
    3.4   Activities for demonstrating proficiency in operating a computer for educational purposes.

4.   Telecommunications concepts.
    4.1   Activities for students to demonstrate understanding of how the multiple media tools of graphics, pictures, color, motion, and music can enhance communication in television, film, radio, and advertising.

5.   Usefulness of technology and the ability to select the appropriate tool(s) and technology resource(s) to address those tasks and problems.

6.   The impact of technology on careers and society and the need for its ethical use.

7.   Personal and occupational uses of computers and other technology.

Keyboarding

1.   Keyboarding skills.
    1.1   Activities for students to demonstrate understanding of and proficiency with these skills and concepts.

Computer Applications

The purpose is to place emphasis on microcomputer applications through hands-on activities presented in an interactive learning environment. Specific content to be covered should include word processing, databases, spreadsheets, integrated software applications, communications packages, and presentation tools. Specific content to be covered should include, but not be limited to:

1. Appropriate use of varied input and output devices, and file management and transfer concepts.

2. Ergonomic principles applicable to the configuration of computer workstations. (Basic)

3. Information systems   (Basic)
    3.1   Keyboarding skills.
    3.2   Current and emerging computer technology and software.
    3.3   Communications and networking systems.
    3.4   Install and update software.
    3.5   Reference sources such as on-line help, vendor bulletin boards, tutorials, and manuals available for application software. (Basic/Intermediate)
    3.6   Troubleshooting problems with computer software, hardware, peripherals, and other office equipment. (Basic/Intermediate)
    3.7   Activities for demonstrating proficiency in keyboarding.
    3.8   Activities for demonstrating proficiency in troubleshooting computer problems.

4. Word Processing
    4.1   Creating, editing and manipulating documents using word processing software.
    4.2   Activities for demonstrating proficiency with word processing software. (Basic)
    4.3   Activities for demonstrating proficiency with advanced word processing skills. (Intermediate)

5. Spreadsheets
    5.1   Using words, symbols, variables, tables, and graphs.   (Basic/Intermediate)
    5.2   Mathematical processes and tools. (Basic)
    5.3   The impact of changing parameters of given functions.   (Basic)
    5.4   Limitations of using statistical techniques and data in making inferences and valid arguments.   (Basic)
    5.5   Activities for demonstrating proficiency with spreadsheets.   (Intermediate)

6. Databases (Basic)
    6.1   Creating, editing and manipulating documents using databases.
    6.2   Multiple systems for organizing data.
    6.3   Charts, tables, and plots.
    6.4   Activities for demonstrating proficiency with databases.   (Intermediate)

7. Graphic images. (Basic)

   7.1 Production elements that contribute to the effectiveness of a specific medium.

   7.2 Integrating multimedia and technology into presentations.

   7.3 Tools, media, processes, and techniques.

   7.4 Maps, geographic technologies including geographic information systems (GIS) and satellite-produced imagery, and other advanced graphic representations. (Intermediate)

   7.5 Activities for demonstrating proficiency with manipulating graphic images. (Intermediate)

8. Research using telecommunications and the Internet. (Basic)

   8.1 Research skills and tools.

   8.2 Primary source information.

   8.3 Access, process, and transmit information through all mediums (e.g., fax, e-mail, modem, Internet, teleconferencing).

   8.4 Activities for demonstrating proficiency with electronic research. (Intermediate)

9. The impact of computers on society and the need for their ethical use. (Basic)

10. Using information management tools and logical planning to describe the tasks, resources, and timelines necessary for the completion of specified projects. (Intermediate/advanced)

    10.1 Activities for demonstration of proficiency at both intermediate and advanced levels of using information management tools.

11. Using Input and output devices, for file management and transfer concepts. (Intermediate)

12. Access strategies and appropriate use of the Internet and electronic communications. (Intermediate)

13. Creating visual organizers and design solutions (e.g., storyboards, flowcharts, schematic drawings) for specified problems. (Intermediate)

    13.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

14. Productivity and multimedia tools and peripherals. (Intermediate)

15. Activities to demonstrate skill in using technology to increase productivity and enhance performance. (Basic/Intermediate/Advanced)

Emergent Computer Technologies (9-12)

The purpose is to enable students to develop knowledge of computer-based emergent technologies and telecommunications, and related ethics, issues, and trends. Specific content to be covered should include, but not be limited to:

1.   Computer literacy concepts and skills.

2.   Emergent computer-based technologies.
   2.1   Production elements that contribute to the effectiveness of a specific medium.
   2.2   Integrating multimedia and technology into presentations.

3.   Emergent telecommunications.
   3.1   Activities requiring students to critically analyze specific elements of mass media with regard to the extent to which they enhance or manipulate information.

4.   The potential impact of emerging technologies on society and the need for their ethical use.
   4.1   Computer security issues related to the use of technology.
   4.2   The impact of technology on personal, family, and community health.
   4.3   Legal issues.

5.   Form and functionality of emergent computer-based technologies and telecommunications.
   5.1   Selecting software packages.
   5.2   Multimedia terminology.
   5.3   Multimedia tools.
   5.4   Performance testing.

6.   Trends in the development of emergent computer-based technologies and telecommunications.

7.   Career opportunities in emergent computer-based technologies and telecommunications.

DIGITAL PUBLISHING

The purpose is to offer a broad foundation of knowledge and skills in digital publishing. Specific content to be covered should include, but not be limited to:

1.   Using visual graphics as a tool to convey technical or complex information to a diverse audience.

2.   Transdisciplinary computer visualization techniques and applications.
   2.1   Use of digital publishing software.
   2.2   Use of multiple color designs using different color techniques including color process and spot color, multicolor process, tones, hues, and values.
   2.3   Use of kerning, tracking, horizontal/vertical scale, baseline shift, etc.

3.   Concepts, processes and methods by which computer graphics can impact visual perception of reality, abstractions and creativity.

4.   Animation and graphics programming.
   4.1   Activities that provide the opportunity to demonstrate proficiency with using animation and graphics programming.

5.   Career opportunities related to transdisciplinary computer graphics programming.

6.   Server configuration standards.
   6.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

7.   Digital publishing concepts.
   7.1   Legal and ethical issues.
   7.2   Equipment and materials.
   7.3   Hardware and software.

8.   Digital publishing operations.
   8.1   Project specifications and costs.

9.   Digital imaging.
   9.1   Use of a scanner.
   9.2   Proper resolution and screen values (e.g., PPI, LPI, DPI in documents).
   9.3   Formats and modes (e.g., EPS, TIFF, PICT, JPEG, ASCII, binary).
   9.4   Digital cameras.

9.5   Image editing software.
9.6   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

10.   Concepts, processes and methods by which computer graphics can impact visual perception of reality, abstractions and creativity.

11.   Layout, design, and measurement.
11.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

MULTIMEDIA

The purpose is to enable students to develop and apply knowledge of multimedia production and presentation.

Specific content to be covered should include, but not be limited to:

1.   Presentation production.
1.1   Types of presentations (informing, selling, teaching, entertaining)
1.2   Presentation marketing mediums (ex. print media such as newspaper, magazines; TV; movies; computer presentations; interactive CD ROM; kiosks, and Web pages, etc.)
1.3   Design characteristics (fonts, size and styles, backgrounds, etc.).
1.4   Copyright laws, including copyright statue, disclaimers, and filing procedures.
1.5   Graphic and other file formats (e.g., EPS, TIFF, JPEG, ASCII, MPEG, MIDI, AVI, WAV, etc.).
1.6   Presentation vocabulary/terms.
1.7   Activities that provide the opportunity to demonstrate understanding of these skills and concepts.

2.   Presentation software and equipment.
2.1   Shooting and editing video, animation, music, narration and adheres to good design principles, use of transitions, and effective message conveyance. (Intermediate)
2.2   Roles and responsibilities of a multimedia production team (e.g. project manager, creative or design director, content experts, writers, graphic designers, animators, sound designers, videographer, interface designers/programmers, etc.). (Intermediate)

3.   Web editor, web design, or web animation software for web creation.
3.1   Digital imaging software (e.g. ImageReady in Photoshop)
3.2   Optimize images to make them "Web ready"
3.3   Image formats related to photos and graphics on the Internet (e.g. Graphic formats (TIFF & EPS), Web formats (JPEG, GIF, PNG), etc.).
3.4   Photograph compression factors (such as transmission speed, color reduction, and browser support).

4.   Digital photography and digital imaging.
      4.1   Ethics related to digital imaging, and legal and consent issues.
      4.2   Design principles in digital photography compositions.
      4.3   Image manipulation, color correction, and special effects.
      4.4   Scanning and cropping photographs.
      4.5   Incorporating scanned or digitally taken photographs into documents (poster, brochure, card, photo journalism story, report or book covers, letterhead, etc.).
      4.6   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

5.   Video editing software and equipment. (Intermediate)
      5.1   Non-linear video editing software and equipment.
      5.2   Offline and "real time" video editing.
      5.3   Animated GIF's.
      5.4   Batch processing and project trimming.
      5.5   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

Computer Programming

The purpose is to provide students the opportunity to learn programming in modern computer languages.

Specific content to be covered should include, but not be limited to:

1.   Basic concepts and uses of computer programming. (Basic)
      1.1   Needs for programming.
      1.2   Activities that provide the opportunity to demonstrate understanding of these concepts.

2.   Programming techniques and concepts. (Basic)
      2.1   Activities that provide the opportunity to demonstrate understanding of these skills and concepts.

3.   Development and use of specified programming language(s). (Basic)
      3.1   Activities that provide the opportunity to demonstrate understanding of these concepts and skills.

4.   Appropriate syntax, vocabulary, and data structures. (Basic/Intermediate)
      4.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

5.   Sequential and logical problem solving; and algorithms and flowcharts. (Basic)
      5.1   Activities for using problem-solving strategies.

5.2   Activities that provide the opportunity to develop and modify algorithms and flowcharts.

6.   Analyzing real-world problems that lend themselves to computer solutions. (Basic)
        6.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

7.   Writing, testing, and debugging programs using specified programming language(s) to solve real-world problems. (Basic/Intermediate)
        7.1   Interface for systems integration. (Intermediate)
        7.2   Programs that import/export data from external sources. (Intermediate)
        7.3   Activities that provide the opportunity to demonstrate understanding of and proficiency with these skills and concepts.

8.   Coding programs. (Basic)
        8.1   Recognized programming standards.
        8.2   Internal documentation statements as needed in the program source code.
        8.3   High-level languages.
        8.4   Logical statements (e.g., If-Then-Else, Do…While)
        8.5   Program language editor.
        8.6   Rounding functions in calculations with programs.
        8.7   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

9.   Program maintenance. (Basic)
        9.1   Analyzing output, and identifying and annotating errors or enhancements.
        9.2   Designing, coding, testing, and debugging modifications.
        9.3   Updating production programs.
        9.4   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

10.   Documentation. (Basic)
        10.1   Established documentation standards.
        10.2   Writing documentation to assist operators and end-users.
        10.3   Updating existing documentation to reflect program changes.
        10.4   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

11.   Enhanced program structures. (Basic)
        11.1   Multi-level subtotals and page breaks.
        11.2   Tables or arrays or routines for data entry and look-up.
        11.3   Iteration.
        11.4   Master files.
        11.5   Transactions.

11.6   Programs that read and write sequential files, indexed-sequential files, and random files.

11.7   Activities that provide the opportunity to demonstrate understanding of these skills and concepts.

12.   The ethical, social, and historical and legal implications of computers. (Basic)

13.   Operating systems, environments, and platforms. (Basic)

13.1   Types of operating systems/environments for different computer hardware platforms.

13.2   Functions of different operating systems.

13.3   The implications of using multiple languages.

13.4   Activities that provide the opportunity to demonstrate understanding of these concepts.

14.   Software quality assurance. (Basic)

14.1   Legal and social consequences of errors in software.

14.2   Software security measures. (e.g., physical security, passwords, virus protection/prevention).

14.3   Activities that provide the opportunity to demonstrate understanding of these concepts.

15.   Functions of information processing. (Intermediate)

15.1   Storage of numeric values to insure precision need for calculations (e.g., integer, fixed-point, floating-point).

15.2   Blocking and buffering when accessing data on tape and disk storage.

15.3   Activities that provide the opportunity to demonstrate proficiency with these concepts.

16.   Advanced concepts and uses of computer programming. (Intermediate)

16.1   Computer resources necessary to run a program.

16.2   Object-oriented concepts and examples of objects in an object-oriented language.

16.3   Development methodologies, programming and system languages, database technologies, and data communication.

16.4   External files in a client/server environment.

16.5   Project and time management tools.

16.6   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

17.   Development and use of specified programming language(s). (Intermediate)

17.1   Performance, functionality, and validity of various software packages.

18.   Sequential and logical problem solving; and develop and modify algorithms and flowcharts to solve **complex** problems. (Intermediate)

18.1   Activities that require students to define and analyze sequential and logical problem solving at a complex level, and to develop appropriate algorithms and flowcharts.

18.2 Activities that require students to describe, analyze, and generalize relationships, patterns, and functions using words, symbols, variable, tables, and graphs.

19. Define and analyze complex problems that lend themselves to computer solutions. (Intermediate)

19.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

Computer Programming – BASIC (9-12)

The purpose is to enable students to learn programming in BASIC language.

Specific content to be covered should include, but not be limited to:

1. Introductory concepts and uses of computer programming. (Basic)

2. The development and use of BASIC programming language. (Basic)

3. Sequential and logical problem solving; and develop and modify algorithms and flowcharts to solve problems. (Intermediate)

3.1 Activities that require students to define and analyze sequential and logical problem solving and to develop appropriate algorithms and flowcharts.

3.2 Activities that require students to describe, analyze, and generalize relationships, patterns, and functions using words, symbols, variable, tables, and graphs.

3.3 Selection of proper algorithms to reach a solution to a problem. (Intermediate/Advanced)

4. Data structures and structured programming principles. (Basic)

4.1 Structured programming techniques. (Intermediate/Advanced)

4.2 Activities that provide the opportunity to demonstrate knowledge of these skills and concepts.

5. Subroutines, looping, branching, string functions, and graphics in BASIC programming. (Basic)

5.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

6. Analyzing real-world problems that lend themselves to computer solutions. (Basic)

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6.1   Activities that provide the opportunity to define and analyze a real-world problem that has a computer solution.

7.   Writing, testing, and debugging programs using specified programming language(s) to solve real-world problems. (Basic/Intermediate)
7.1   Interface for systems integration. (Intermediate)
7.2   Programs that import/export data from external sources. (Intermediate)
7.3   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

8.   The ethical, social, and legal implications of computers. (Basic)

9.   Use of advanced programming techniques in BASIC to implement a program that uses those algorithms and obtains a correct solution. (Intermediate/Advanced)
9.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

WEB MASTER

The goal is to prepare students for personal use or for employment service in the area of web design. Specific content to be covered should include, but not be limited to:

1.   The historical, social and ethical, and legal implications of varied uses of the Internet.

2.   Internet/Intranet tools.
2.1   Hardware components used on the Internet/Intranet.
2.2   Software components used on the Internet (e.g. browser software with plug-ins).
2.3   Compression programs.
2.4   Back-ups.

3.   Principles, functions, and techniques used in the design of web pages.
3.1   Web terminology.
3.2   Universal Resource Locators (URLs) and associated protocols (e.g., .com, .org, .edu, .gov, .net, .mil).
3.3   Communicating on the Internet/Intranet (e.g., e-mail, forums, IRCm CHAT, Listserv, Usenet, MOOs, etc.).
3.4   Activities that provide the opportunity to demonstrate knowledge of these skills and concepts.

4. Incorporating client and user needs into a web site.
   - 4.1 Navigational efficiency.
   - 4.2 Site objectives and audience.
   - 4.3 Design strategies to reach and keep your audience.
   - 4.4 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

5. Creating visual organizers used in the development of a web site plan.
   - 5.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

6. Writing, testing, and debugging specified code for a web page.
   - 6.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

7. Authoring tools, including text- or graphically-based editing programs.
   - 7.1 Storyboarding techniques (e.g., linear, hierarchical). (Basic)
   - 7.2 Advanced storyboarding and organization for Web site design. (Intermediate)
   - 7.3 Design layouts.
   - 7.4 Embedding files into Web page designs. (audio, video, animation)
   - 7.5 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

8. Links, tables, frames, image maps, and web graphics.
   - 8.1 Graphic formats and conversion.
   - 8.2 Image sources.
   - 8.3 Image design software.
   - 8.4 Low-bandwidth graphic file types (e.g., transparent images, filters).
   - 8.5 Digital imaging software.
   - 8.6 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

9. Interactivity using scripting additions and/or dynamic content.
   - 9.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

10. Web site maintenance, including storage, uploading, downloading, and file management.
    - 10.1 Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

NETWORK MANAGEMENT AND PC SUPPORT

The purpose is to offer a broad foundation of knowledge and skills in network management and PC support. Specific content to be covered should include, but not be limited to:

1.   Computer literacy.

2.   Features, functions, and purposes of the various components of a microcomputer. (Basic)

3.   Basic rules for hardware safety. (Basic)

4.   E-mail software and functions.
        4.1   Activities that provide the opportunity to demonstrate proficiency in managing, configuring and installing e-mail software. (Advanced)

5.   Basic preventative hardware maintenance. (Basic)

6.   Diagnosing typical microcomputer component and peripheral problems.   (Basic)
        6.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.
        6.2   Activities that provide the opportunity to perform end-use support and assistance by troubleshooting and diagnosing through telephone, e-mail, remote access, or direct contact.

7.   Replacement, installation, and configuration of personal microcomputer components, peripherals, and operating system software, and device drivers.
        7.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

8.   Peripherals for specific applications.
        8.1   Electronic communications software and hardware.
        8.2   Internet access and use.
        8.3   Browser features.
        8.4   Activities that require students to evaluate the appropriateness of various peripherals for specific applications.

9.   Computer networks.

9.1   Definition and purpose of networks.
9.2   Types of network topologies.
9.3   Interrelationships among the major components of networks (e.g., servers, clients, transmission media, network operating system, network boards).
9.4   Standards, protocols, and the Open Systems Interconnection (OSI) reference model.
9.5   Responsibilities of the network administrator (e.g., rights and responsibilities).
9.6   Logon procedures.
9.7   Printing on a network.
9.8   Network management infrastructures (e.g., network monitoring, alerting, security) to perform administrative tasks.
9.9   Backup strategies and procedures.

10.   System software and application software.
10.1   Activities that require students to identify and diagnose software problems and to execute appropriate course of action.
10.2   Activities that require students to perform system backup.

11.   Purpose of and interrelationships among major hardware components.
11.1   Main processing boards (e.g., CPUs, RAM, ROM, bus architecture). (Basic)
11.2   Communication ports (e.g., serial and parallel ports). (Basic)
11.3   Peripheral devices (e.g., scanners, modems, hard drives, printers.) (Basic)
11.4   Portable systems (e.g., battery, LCD, AC adapter, PDAs).   (Basic)

12.   Installation and configuration activities.
12.1   System hardware setup. (Intermediate)
12.2   Installation and configuration of hardware and device drivers. (Intermediate)
12.3   Operating system software installation. (Advanced)
12.4   Installation and configuration or application software. (Advanced)
12.5   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

13.   Troubleshooting, installing, and upgrading personal computer components. (Intermediate)
13.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

14.   Record management and maintenance activities. (Advanced)
14.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

15.   Interrelationships among major hardware components. (Advanced)
15.1   Network interface cards.
15.2   Other network hardware (e.g., cables, routers, hubs).
15.3   Activities that provide the opportunity to demonstrate knowledge and proficiency with these skills and concepts.

16. Operating systems (Advanced)
    16.1   File naming conventions.
    16.2   Data measurement (e.g., bits, bytes, kilobytes).
    16.3   Command language syntax and menu structure.
    16.4   Common language syntax and menu structure.
    16.5   Directory tree structures.
    16.6   Wildcard characters and operation system file selection filtering techniques.
    16.7   Storage formatting and preparation activities.
    16.8   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

17. Graphical user interface (GUI) operating systems   (Advanced)
    17.1   Activities that provide the opportunity to demonstrate proficiency with these skills and concepts.

Appendix B

Requirements for
Braille Textbook Production

INSTRUCTIONS FOR PREPARING COMPUTER DISKETTES REQUIRED FOR AUTOMATED BRAILLE TEXTBOOK PRODUCTION

STATUTORY AUTHORIZATION

Section 233.0561(5), Florida Statutes, states that, "...any publisher of a textbook adopted pursuant to the state instructional materials adoption process shall furnish the Department of Education with a computer file in an electronic format specified by the Department at least 2 years in advance that is readily translatable to Braille and can be used for large print or speech access. Any textbook reproduced pursuant to the provisions of this subsection shall be purchased at a price equal to the price paid for the textbook as adopted. The Department of Education shall not reproduce textbooks obtained pursuant to this subsection in any manner that would generate revenues for the department from the use of such computer files or that would preclude the rightful payment of fees to the publisher for use of all or some portion of the textbook."

OBJECTIVE

Electronic text (etext) is needed to accelerate the production of textbooks in Braille and other accessible formats through the use of translation software. Some embedded publisher formatting commands help speed the conversion of English text to Braille or other accessible formats. Therefore, the objective of these instructions is to prompt publishers to provide textbook data in a format that will be useful to Braille and other accessible format producers while at the same time allowing each publisher the flexibility of using existing composition or typesetting systems. Publishers may produce etext files in one of three formats, as shown in the specifications below.

By April 1, 1998, publishers of adopted student textbooks for literary subjects must be able to provide the computer diskettes **UPON REQUEST**. Publishers shall provide nonliterary subjects when technology becomes available for the conversion of nonliterary materials to the appropriate format.

The requested computer diskettes shall be provided to the Florida Instructional Materials Center for the Visually Impaired (FIMC), 5002 North Lois Avenue, Tampa, Florida 33614; (813) 872-5281; in Florida WATS (800) 282-9193 or (813) 872-5284 (FAX). The center will contact each publisher of an adopted textbook and provide delivery instructions.

SPECIFICATIONS

1. FORMAT (Three Options):
   a. A full implementation of Standard Generalized Markup Language (SGML).
   b. XML-Extensible Markup Language
   c. ASCII – (Last Resort!)

2. OPERATING SYSTEM:
   Windows

3. DISKETTE SIZE:
   3.5, CD, Zip100

4. DISKETTE CAPACITY:
   Double-sided/high density

5. DISKETTE LABELING:
   a. Sequential Number/ISBN
   b. Book Title
   c. File Name
   d. Name of Publisher
   e. Name of Typesetting Company/Contact Name
   f. Format Option and Version
   g. Copyright Date
   h. Wording such as: "All rights reserved. As described in Chapter 233.0561(5), Florida Statutes, no use may be made of these diskettes other than the creating of a Braille, Large Print, or Recorded version of the materials contained on this diskette for students with visual impairments in the State of Florida."

6. REQUIRED CONTENTS:
   a. Title Page
   b. List of Consultants and Reviewers (if appropriate)
   c. Table of Contents
   d. All Textbook Chapters
   e. All Appendices
   f. All Glossaries
   g. Indices

7. FILE STRUCTURE:
   Each chapter of a textbook will be formatted as a separate file.

8. FILE LIST:
   A separate file listing the structure of the primary files must be provided. This file should be labeled DISKLIST TEXT. In addition, all special instructions (e.g., merging of materials kept in a separate file) should be noted in this file.

9. LOCATION OF SPECIAL DATA:
   Marginal notes, footnotes, captions, and other special items must be placed consistently within each text file.

10. CORRECTIONS AND CHANGES:
    A conscientious effort should be made to update files to exactly duplicate the adopted printed version of the textbook (including corrections and changes). If this cannot be accomplished in a timely and cost effective manner, the publisher will coordinate with the FIMC Supervisor and provide to the Supervisor one set of marked tearsheets of all corrections and changes not included in the files.